

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT
GULF OF MEXICO REGION

ACCIDENT INVESTIGATION REPORT

For Public Release

1. OCCURRED

DATE: 09-OCT-2021 TIME: 0910 HOURS

2. OPERATOR: Sanare Energy Partners, LLC

REPRESENTATIVE:

TELEPHONE:

CONTRACTOR: Quality Production Management

REPRESENTATIVE:

TELEPHONE:

- STRUCTURAL DAMAGE
- CRANE
- OTHER LIFTING
- DAMAGED/DISABLED SAFETY SYS.
- INCIDENT >\$25K
- H2S/15MIN./20PPM
- REQUIRED MUSTER
- SHUTDOWN FROM GAS RELEASE
- OTHER **Line Failure and Rupture**

3. OPERATOR/CONTRACTOR REPRESENTATIVE/SUPERVISOR ON SITE AT TIME OF INCIDENT:

8. OPERATION:

4. LEASE: G04909

AREA: MP LATITUDE: 29.30194788

BLOCK: 64 LONGITUDE: -89.05467014

- PRODUCTION
- DRILLING
- WORKOVER
- COMPLETION
- HELICOPTER
- MOTOR VESSEL
- PIPELINE SEGMENT NO.
- OTHER

5. PLATFORM: A

RIG NAME:

6. ACTIVITY:

- EXPLORATION (POE)
- DEVELOPMENT/PRODUCTION (DOCD/POD)

9. CAUSE:

7. TYPE:

INJURIES:

HISTORIC INJURY

OPERATOR CONTRACTOR

REQUIRED EVACUATION

LTA (1-3 days)

LTA (>3 days)

RW/JT (1-3 days)

RW/JT (>3 days)

FATALITY

Other Injury

- EQUIPMENT FAILURE
- HUMAN ERROR
- EXTERNAL DAMAGE
- SLIP/TRIP/FALL
- WEATHER RELATED
- LEAK
- UPSET H2O TREATING
- OVERBOARD DRILLING FLUID
- OTHER _____

POLLUTION

FIRE

EXPLOSION

LWC HISTORIC BLOWOUT

UNDERGROUND

SURFACE

DEVERTER

SURFACE EQUIPMENT FAILURE OR PROCEDURES

COLLISION HISTORIC >\$25K <=\$25K

10. WATER DEPTH: 35 FT.

11. DISTANCE FROM SHORE: 4 MI.

12. WIND DIRECTION:
SPEED: M.P.H.

13. CURRENT DIRECTION:
SPEED: M.P.H.

14. SEA STATE: FT.

15. PICTURES TAKEN:

16. STATEMENT TAKEN:

INCIDENT SUMMARY:

On 9 October 2021, at Main Pass (MP) 64 A #1, the reciprocating gas compressor's (CBA-0900) 3rd stage discharge piping exploded between the discharge bottle (CZZ-0980) and the exchanger (HAL-0985) during startup after shutdown. Sanare Energy Partners, LLC (Sanare) is the operator on file for MP 64 A #1. MP 64 A #1 is a complex consisting of 2 bridge-connected structures "A" and "#1." The compressor is on MP 64 A where personnel are quartered. The event was extremely short in duration. The external damage was limited to a section of 3 in piping and insulation. There were no injuries. Personnel did not muster. BSEE determined this incident to be an explosion as per the NTL No. 2019-N05 definition.

SEQUENCE OF EVENTS:

On 9 October 2021, the reciprocating gas compressor was running several days without incident before it began to backfire and then shut down on low oil pressure. At about 0900, the compressor was re-started. The operator let the engine idle unloaded with both inlet and final discharge Shut Down Valves (SDV) closed. The Blow Down Valve (BDV) was open and the compressor was at zero pressure. At about 0910 a blast occurred that burst the 3 in 90-degree elbow.

BSEE INVESTIGATION:

The BSEE Investigator reviewed the incident in eWell and requested maintenance records, compressor runtime, witness statements, and Sanare's investigation report. Sanare also provided photos of the damaged area and a schematic of the compressor. Sanare analyzed the section of pipe that failed and found that it likely had integrity before the blast. Sanare also successfully tested the compressor components, piping, and vessels for integrity. Sanare performed successful leakage tests on the compressor's flanged joints. Sanare successfully tested the SDV's for leakage. And last, Sanare successfully tested the Pressure Safety Valves (PSVs) at set pressures. Sanare gathered evidence including 2 failed valve cover gaskets on the 1st stage compression suction cylinder. BSEE concurs with Sanare's conclusion that the failed gaskets allowed oxygen to enter into the compressor gas stream. BSEE determined that this gas oxygen mixture was likely auto ignited by high temperature on the discharge of the 3rd stage cylinder upstream of the final heat exchanger.

Sanare informed BSEE that because the operator mistakenly thought that the first noise was a backfire in the engine rather than an ignition in the compressor cylinder, this may have lead the operator to restart the compressor rather than shut down until a mechanic could diagnose the failure.

CONCLUSIONS:

The gas compressor at MP 64 A experienced an event of oxygen intrusion into the compressor inlet suction stream which resulted into an explosion in a small section of 3 inch piping upstream of the 3rd stage heat exchanger. The oxygen intrusion was likely caused by 2 leaking valve cover gaskets. Sanare's investigation team suggests that the gaskets failed due to excessive heat in the cylinders due to the igniting gas/ oxygen mixture. The ignition was likely caused by high temperature gas after compression. BSEE determined this incident to be an explosion as per the NTL No. 2019-N05 definition.

18. LIST THE PROBABLE CAUSE(S) OF ACCIDENT:

Equipment Failure: 2 leaking compressor 1st stage suction valve cover gaskets.

19. LIST THE CONTRIBUTING CAUSE(S) OF ACCIDENT:

An explosive mixture of oxygen from the leaking gaskets, gas from the process stream, and ignition from heat on the discharge of the compressor contributed to the explosion.

Because the operator mistakenly thought that the first noise was a backfire in the engine rather than an ignition in the compressor cylinder, this may have lead the operator to restart the compressor rather than shut down until a mechanic could diagnose the failure.

20. LIST THE ADDITIONAL INFORMATION:

Repairs were performed and the compressor was returned to service.

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

3 in piping, 90-degree fitting and insulation.

Explosion

ESTIMATED AMOUNT (TOTAL): \$5,860

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

N/A

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: NO

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

N/A

25. DATE OF ONSITE INVESTIGATION:

28. ACCIDENT CLASSIFICATION:

14-OCT-2021

29. ACCIDENT INVESTIGATION

26. INVESTIGATION TEAM MEMBERS:

PANEL FORMED: NO

Gerald Taylor Accident Investigator /

OCS REPORT:

27. OPERATOR REPORT ON FILE:

30. DISTRICT SUPERVISOR:

APPROVED

DATE:

10-JAN-2022